

Kinesiology of Exercise Quizzes

Based on the Work of Dr. Michael Yessis



Volume 5 - The Spine, Abdominals

KinX Learning

Kinesiology of Exercise Quizzes by KinX Learning

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1. How many actions are possible in the spine?

A. 1

B. 2

C. 4

D. 5

[ANSWER](#)

2. Which action is bending sideways to the right or left?

A. Extension

B. Flexion

C. Lateral flexion

D. Rotation

[ANSWER](#)

3. Which action is forward bending of the spine?

A. Extension

B. Flexion

C. Lateral flexion

D. Rotation

[ANSWER](#)

4. Which exercise stresses the lower portion of the rectus abdominus?

A. Sit-up

B. Reverse Sit-up

C. Crunch

D. Abdominal Machine Crunch

[ANSWER](#)

5. Which exercise involves the upper portion of the rectus abdominus?

A. Sit-up

B. Reverse Trunk Twist

C. Russian Twist

D. Twisting

[ANSWER](#)

6. Which exercise involves the iliopsoas?

A. Sit-up

B. Reverse Trunk Twist

C. Russian Twist

D. Hanging Leg Raise

[ANSWER](#)

7. Which muscle(s) is responsible for rotation of the upper and lower trunk, lateral flexion, and flexion of the spine?

A. Rectus abdominis

B. Internal and external obliques

C. Internal obliques only

D. External obliques only

[ANSWER](#)

8. The spine has how many vertebrae?

A. 1

B. 12

C. 24

D. 100

[ANSWER](#)

9. The section of the spine that is in the back of the neck is called?

A. Cervical vertebrae

B. Thoracic vertebrae

C. Lumbar vertebrae

D. Sacrum and Coccyx

[ANSWER](#)

10. Which of the following is true?

A. The external oblique is located on both sides of the rectus abdominis.

B. The internal oblique is located directly under the external oblique.

C. The rectus abdominis runs vertically across the front of the abdominal wall.

D. All are True.

[ANSWER](#)

-
- Answers
-
1. D
-
2. C
-
3. B
-
4. B
-
5. A
-
6. D
-
7. B
-
8. C
-
9. A
-
10. D
-

Five basic movements in the spine are possible:

1. **Flexion**, or forward bending of the spine, in which the anterior surfaces of the vertebrae move closer to one another.
2. **Extension** is the return from a position of flexion to the anatomical position. It is the opposite of flexion. Going beyond the anatomical position (bending backward) is called hyperextension. Keep in mind that slight hyperextension is the normal position of the lumbar spine (also known as slight lordosis).
3. **Lateral flexion**, is bending sideways to the right or left. In this action the shoulders move toward the hip, or the hips (pelvis) move toward the shoulders when the hips are in a non-support hanging position.
4. **Shoulder (shoulder girdle) rotation**, is a twisting action around the long axis of the spinal column. In this movement the shoulders (or hips) are in motion. Shoulder rotation can also occur with the axis in the left or right side of the body.
5. **Hip rotation**. If you are positioned so that your body is hanging, supported by your arms, the abdominal or lower back muscles rotate your hips to the right or left while your shoulders remain stationary. This is also known as transverse pelvic girdle rotation. It can also occur when you are standing, but in that case the action and muscles involved are in the hip joints, not the midsection. Note that discussion here is of the movements seen in the lumbar spine. Analogous actions take place in the cervical spine but they will not be discussed.

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Lateral flexion, is bending sideways to the right or left. In this action the shoulders move toward the hip, or the hips (pelvis) move toward the shoulders when the hips are in a non-support hanging position.

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C

Lateral flexion

In spinal flexion, or forward bending of the spine, the anterior surfaces of the vertebrae move closer to one another.

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B

Flexion

Crunches and sit-ups develop mainly the upper portion of the abdominals. To develop more of the lower abdominals, you should do the reverse sit-up.

In this exercise the lower portion of the abdominal muscles, especially the rectus abdominis, shorten to perform spinal flexion.

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B

Reverse Sit-up

In the sit-up, the upper rectus abdominis and internal and external obliques are involved in spinal flexion. The upper rectus abdominis is not a separate group of muscles; rather, only the upper portion of the entire muscle is in action, as substantiated by EMG (electromyographic) studies. The rest of the muscle remains under tension. In this exercise your head and shoulders are lifted and move toward your hips.

A

Sit-up

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Hanging and forearm-supported hanging leg raises involve the iliopsoas, the rectus femoris, and the pectineus in hip flexion and the rectus abdominis and external oblique muscles in spinal flexion. In this action you raise your legs, either held straight or bent, toward your trunk from the vertical position. When your legs get past 45-60 degrees of upward motion, your pelvic girdle begins to rotate posteriorly, that is, your iliac crests move backward and your lower pelvis moves forward and upward to assist in continuing to raise your legs.

D

Hanging Leg Raise

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The internal and external oblique muscles are responsible for rotation of the upper and lower trunk, lateral flexion, and flexion of the spine.

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B

Internal and external obliques

The spine provides the main framework and foundation for most of the movements of the body and extremities. The spinal column is a unique and well designed structure. It has a total of 24 vertebrae, and because each vertebra must support the weight of all the body parts above it, the lower vertebrae are much larger than the upper ones.

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The spine has four normal curves which can be seen when viewed from the side. The cervical (neck) and lumbar (lower back) curves are concave to the rear, and the thoracic (chest) and sacral (pelvic) curves are convex to the rear.

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A

Cervical vertebrae

The external oblique, which covers the front sides of the abdomen, is located on both sides of the rectus abdominis.

The internal oblique is located directly underneath the external oblique, and at its upper end its fibers run at nearly right angles to the external oblique fibers, forming an inverted letter V when viewed from the front. At the lower end, however, the internal oblique fibers are almost horizontal.

The rectus abdominis is a fairly slender muscle that runs vertically across the front of the abdominal wall. It originates on the crest of the pubis and inserts on the cartilage of the fifth, sixth, and seventh ribs. The right and left halves are separated by a tendinous strip about an inch wide called the linea alba.

D

All are True

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